

Title: Dyskeratosis Congenita GeneReview Supplemental Material – Table 4

Author: Savage SA

Updated: May 2016

Table 4. Selected *TERC* Pathogenic Variants

RNA Nucleotide Change (Alias ¹)	Reference Sequences	Literature Reference ²
r.-240delct		Field et al [2006]
(C-99G) ³		Keith et al [2004]
r.2g>c (G2C)		Marrone et al [2007]
Contiguous gene deletion ⁴ (Δ1- 316)		Vulliamy et al [2004]
r.21c>u		Fogarty et al [2003]
r.28_34del7 (Δ28-34)		Xin et al [2007]
r.35c>u		Du et al [2009]
r.37a>g (A37G)		Vulliamy et al [2006]
r.48a>g (A48G)		Vulliamy et al [2006]
r.52_55delcuua		Vulliamy et al [2006]
r.53_87del35		Marrone et al [2007]
r.58g>a (G58A)		Dokal & Vulliamy [2003]
r.72c>g	NR_001566.1	Dokal & Vulliamy [2003]
r.79delc		Vulliamy et al [2006]
r.96-97delcu		Vulliamy et al [2004]
r.98g>a (G98A)		Calado & Young [2008]
r.100u>a (T100A)		Du et al [2009]
c.110_113delgact		Walne & Dokal [2004]
c.107_108gc>ag		Vulliamy et al [2001]
r.116c>u (C116T)		Walne & Dokal [2004]
r.117a>c (A117C)		Ly et al [2005]
r.143g>a (G143A)		Vulliamy et al [2004]
r.178g>a (G178A)		Marrone et al [2007a]
r.180c>u (C180T)		Marrone et al [2007a]
r.204c>g		Fogarty et al [2003]

(C204G)	
r.216_229del14 (Del 216-229)	Vulliamy et al [2006]
r.228G>A (G228A)	Walne & Dokal [2004]
r.305g>a (G305A)	Fogarty et al [2003]
r.322g>a (G322A)	Fogarty et al [2003]
r.323c>u (C323T)	Calado & Young [2008]
(del 378 through 3' end of <i>TERC</i>)	Vulliamy et al [2004]
r.378_415del38	Dokal & Vulliamy [2003]
r.391_392delcc (Δ389-390)	Ly et al [2005]
r.408c>g	Vulliamy et al [2001]
r.408c>a	Marrone et al [2005]
r.410c>g	Vulliamy et al [2001]
r.450g>a	Walne & Dokal [2004]
(16u>c, 16 bp downstream of 3' transcript of <i>TERC</i>)	Fogarty et al [2003]
(821-bp deletion including 3' end of <i>TERC</i>)	Vulliamy et al [2001]

For this gene: the prefix "r." is used to indicate that a change is described at RNA level; numbering is relative to the transcription start site; nucleotides are designated by the bases (in lower case); bases are a (adenine), c (cytosine), g (guanine), and u (uracil).

Note on variant classification: Variants listed in the table have been provided by the author. *GeneReviews* staff have not independently verified the classification of variants.

Note on nomenclature: *GeneReviews* follows the standard naming conventions of the Human Genome Variation Society (www.hgvs.org). See [Quick Reference](#) for an explanation of nomenclature.

1. Variant designation that does not conform to current naming conventions
2. First literature reference given when possible
3. Promoter mutation in an individual with paroxysmal nocturnal hemoglobinuria
4. Deletion of 2980 bp extending from nucleotide 835 in the 3' UTR of *ACTRT3* (*ARPM1*), through the intergenic and *TERC* promoter sequences, to nucleotide 316 of *TERC*.

References

- Calado RT, Young NS. Telomere maintenance and human bone marrow failure. *Blood*. 2008 May 1;111(9):4446-55.
- Dokal I, Vulliamy T. Dyskeratosis congenita: its link to telomerase and aplastic anaemia. *Blood Rev*. 2003 Dec;17(4):217-25.
- Du HY, Pumbo E, Ivanovich J, An P, Maziarz RT, Reiss UM, Chirnomas D, Shimamura A, Vlachos A, Lipton JM, Goyal RK, Goldman F, Wilson DB, Mason PJ, Bessler M. TERC and TERT gene mutations in patients with bone marrow failure and the significance of telomere length measurements. *Blood*. 2009 Jan 8;113(2):309-16.
- Eiler ME, Frohnmayr D, Frohnmayr L, Larsen K, Owen J, eds. *Fanconi Anemia: Guidelines for Diagnosis and Management*. 3 ed. Fanconi Anemia Research Fund, Inc. Available [online](#). 2008. Accessed 3-07-14.
- Fogarty PF, Yamaguchi H, Wiestner A, Baerlocher GM, Sloand E, Zeng WS, Read EJ, Lansdorp PM, Young NS. Late presentation of dyskeratosis congenita as apparently acquired aplastic anaemia due to mutations in telomerase RNA. *Lancet*. 2003 Nov 15;362(9396):1628-30.
- Keith WN, Vulliamy T, Zhao J, Ar C, Erzik C, Bilsland A, Ulku B, Marrone A, Mason PJ, Bessler M, Serakinci N, Dokal I. A mutation in a functional Sp1 binding site of the telomerase RNA gene (hTERC) promoter in a patient with Paroxysmal Nocturnal Haemoglobinuria. *BMC Blood Disord*. 2004 Jun 22;4(1):3.
- Ly H, Calado RT, Allard P, Baerlocher GM, Lansdorp PM, Young NS, Parslow TG. Functional characterization of telomerase RNA variants found in patients with hematologic disorders. *Blood*. 2005 Mar 15;105(6):2332-9.
- Marrone A, Sokhal P, Walne A, Beswick R, Kirwan M, Killick S, Williams M, Marsh J, Vulliamy T, Dokal I. Functional characterization of novel telomerase RNA (TERC) mutations in patients with diverse clinical and pathological presentations. *Haematologica*. 2007 Aug;92(8):1013-20. Epub
- Marrone A, Walne A, Dokal I. Dyskeratosis congenita: telomerase, telomeres and anticipation. *Curr Opin Genet Dev*. 2005 Jun;15(3):249-57.
- Vulliamy T, Marrone A, Goldman F, Dearlove A, Bessler M, Mason PJ, Dokal I. The RNA component of telomerase is mutated in autosomal dominant dyskeratosis congenita. *Nature*. 2001 Sep 27;413(6854):432-5.
- Vulliamy T, Marrone A, Szydlo R, Walne A, Mason PJ, Dokal I. Disease anticipation is associated with progressive telomere shortening in families with dyskeratosis congenita due to mutations in TER. *Nat Genet*. 2004 May;36(5):447-9.
- Vulliamy TJ, Marrone A, Knight SW, Walne A, Mason PJ, Dokal I. Mutations in dyskeratosis congenita: their impact on telomere length and the diversity of clinical presentation. *Blood*. 2006 Apr 1;107(7):2680-5.
- Walne AJ, Dokal I. Dyskeratosis Congenita: a historical perspective. *Mech Ageing Dev*. 2008 Jan-Feb;129(1-2):48-59.
- Xin ZT, Beauchamp AD, Calado RT, Bradford JW, Regal JA, Shenoy A, Liang Y, Lansdorp PM, Young NS, Ly H. Functional characterization of natural telomerase mutations found in patients with hematologic disorders. *Blood*. 2007 Jan 15;109(2):524-32.